

AMENDMENTS TO THE CLAIMS

The below listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-20 (Canceled).

21. (Currently amended) Cooling equipment for cooling a cryogenically cooled material to be manipulated, processed or investigated, said cooling equipment comprising:

a cooling space having an open, upper end for receiving the cooled material and from which the cooled material is removable;

an inner wall limiting the cooling space and being permeable to a cryogenic cooling agent, said cryogenic cooling agent passing into the cooling space through said inner wall in a gaseous phase;

a removable protective bell on the cooling space, said protective bell including an interior chamber communicating with the open, upper end of said cooling space and being at least partially transparent to permit a visible monitoring of the cooled material present in the cooling space, said protective bell including glove sleeves on a front side thereof through which an operator can manipulate samples present in the cooling space without gas exchange;

a cold gas outlet located on a lower side of the protective bell and communicating with the cooling space through said open, upper end of said cooling space and said interior chamber of the protective bell for permitting cooling agent and cold gas to exit the cooling space through the lower side of the protective bell to prevent misting over of said protective bell;

an outer wall;

an intermediate space between the outer wall and the inner wall;

a porous buffer material arranged in the intermediate space; and

a cooling agent supply line communicating with and emptying into the intermediate space adjacent the open, upper end of said cooling space for introducing a cryogenic cooling agent in

liquid form into the porous buffer material of the intermediate space for subsequent transfer of the cooling agent from the buffer material into the cooling space through the inner wall in a gaseous phase, wherein no cooling agent lake forms in the cooling equipment on a bottom of the cooling space.

Claims 22-23 (Canceled).

24. (Previously presented) The cooling equipment according to Claim 21, wherein the inner wall is substantially grid-shaped.

25. (Previously presented) The cooling equipment according to Claim 21, wherein the inner wall comprises a thermally conductive material.

26. (Previously presented) The cooling equipment according to Claim 25, wherein the inner wall consists essentially of metal.

27. (Currently amended) The cooling equipment according to Claim 21, wherein the cooling space is vat-shaped and an upper side of the cooling space has a circumferential edge adjacent said open, upper end.

28. (Previously presented) The cooling equipment according to Claim 27, wherein the cooling agent supply line has a cooling agent distributor extending along the circumferential edge of the cooling space and the cooling agent distributor introduces into the intermediate space the cooling agent in a distributed manner over a length of the cooling agent distributor.

29. (Previously presented) The cooling equipment according to Claim 21, wherein a heating element is arranged in the cooling space.

30. (Previously presented) The cooling equipment according to Claim 29, wherein the heating element is arranged under a heating plate, the heating plate having several perforations that make a circulation of gas possible.

Claims 31-32. (Canceled)

33. (Previously presented) The cooling equipment according to Claim 21, wherein the protective bell has a sample lock.

34. (Canceled)

35. (Currently amended) The cooling equipment according to Claim 21, wherein [[a]] an additional cold gas outlet via which cooling agent and cold gas can escape from the cooling space is arranged on an upper side of the cooling space.

36. (Previously presented) The cooling equipment according to Claim 21, further comprising:

- a temperature sensor arranged in the cooling space for measuring a temperature in the cooling space;

- a controllable cooling agent valve for adjusting an amount of cooling agent supplied; and

- a temperature control device for regulating the temperature in the cooling space, the temperature control device being connected on an input side to the temperature sensor and on an output side to the cooling agent valve.

37. (Previously presented) The cooling equipment according to Claim 36, wherein the temperature control device is connected via a pulse generator to the cooling agent valve, the pulse generator alternately opening and closing the cooling agent valve.

38. (Previously presented) The cooling equipment according to Claim 36, wherein the temperature sensor is arranged in the cooling space so as to measure a temperature of a cryosample in the cooling space.

39. (Canceled)

40. (Previously presented) The cooling equipment according to Claim 21, wherein the cooling agent is liquid nitrogen.

41. (Canceled)